**Before the**
**Federal Communications Commission**
**Washington, D.C. 20554**

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| In the Matter of | ) | |
| | ) | |
| Additional Spectrum for Unlicensed Devices | ) | ET Docket No. 02-380 |
| Below 900 MHz and in the 3 GHz Band | ) | |

To: The Commission

## COMMENTS OF SINCLAIR BROADCAST GROUP INC.

Sinclair Broadcast Group Inc. ("Sinclair") hereby files these Comments in response to the above-captioned *Notice of Inquiry* ("*NOI*") in which the Commission is considering allowing unlicensed transmitters to operate on vacant TV channels.[1] Sinclair is gravely concerned about the Commission's proposal. Considering the lack of progress made to date in the digital television ("DTV") transition, the Commission should be focusing on ways to facilitate the DTV transition, not exploring new shared uses of TV broadcast spectrum that will only further delay an already stalled DTV transition. Whether analog or digital, current over-the-air TV receivers in the homes of consumers today have not been designed to operate in an interference environment with untold numbers of co-channel and adjacent channel unlicensed transmitters. For that reason, the Commission should refrain from considering new unlicensed uses of TV broadcast spectrum until after consumers have replaced their current-generation receivers with new generations of over-the-air receivers that meet certain performance standards. Sinclair believes that the only way unlicensed transmitters can operate on vacant TV channels is if new generations of over-the-air DTV receivers are required to meet certain requirements for selectivity, sensitivity, dynamic range, and multipath tolerance to be able to reject the adjacent

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1 *See Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3 GHz Band, Notice of Inquiry*, ET Docket No. 02-380 (December 20, 2002) ("*NOI*").

and co-channel signals emitted by these unlicensed transmitters, both individually and in the aggregate. For that reason, the Commission should refrain from considering new shared uses of TV broadcast spectrum until after it has adopted and implemented either mandatory performance standards or voluntary performance standards accompanied by a meaningful labeling regime for over-the-air DTV receivers.

**Background**

*Sinclair.* Sinclair is one of the largest over-the-air television broadcasters in America today. Sinclair currently owns and operates, programs, or provides sales services to 62 television stations in 39 markets. Sinclair's television stations reach approximately 24% of U.S. television households and include affiliates of the ABC, CBS, Fox, WB, and UPN networks. Sinclair has invested heavily in the DTV transition, spending millions of dollars to ensure that its stations meet Commission-mandated deadlines for building out DTV facilities.

*NOI on Unlicensed Transmitters in TV Broadcast Spectrum.* In the above-captioned proceeding, the Commission is exploring whether and how to authorize unlicensed transmitters to operate in TV broadcast spectrum. The Commission notes that because its rules require distance separation between co-channel and first-adjacent-channel TV stations, there are a large number of vacant TV channels at any given location. *NOI* at ¶ 10. The Commission speculates that a transmitter operating on a vacant TV channel at a lower power level than a TV station would not need as great a separation distance from co-channel and adjacent channel TV stations to avoid causing interference. *Id.* at ¶ 11. Thus, the Commission predicts that "low power transmitters could potentially operate on vacant channels that could not be used by high power TV stations due to interference concerns." *Id.*

The *NOI* states that "significant advances in technology" will allow devices to be designed to operate only on vacant TV channels in a given geographic area. *NOI* at ¶ 13. For example, the *NOI* notes that devices could be designed to monitor spectrum to avoid operating on frequencies that are in use and to transmit only on unused frequencies. *Id.* Alternatively, devices could incorporate global positioning system ("GPS") chips to determine their location and then reference a database to determine which frequencies are unused in a particular geographic area. *Id.* The Commission predicts that unlicensed transmitters are unlikely to cause interference to TV reception provided the transmitters meet certain power, frequency, and location requirements. *Id.*

The *NOI* asks a series of questions regarding the Commission's vision for unlicensed transmitters sharing TV broadcast spectrum. The Commission asks whether it should impose geographic restrictions on where unlicensed transmitters can operate, whether limits should be placed on the numbers or applications of unlicensed transmitters, and whether temporary restrictions on unlicensed transmitters are needed to avoid impacting the DTV transition. *NOI* at ¶ 14. The Commission inquires as to what power or field strength limits are necessary for unlicensed transmitters to prevent interference to TV reception. *Id.* at ¶ 15. The *NOI* also seeks comment on what separation distances or D/U ratios should be established between unlicensed transmitters and the service of analog, digital, Class A, and low power TV and TV translator stations. *Id.* In addition, the Commission asks whether TV stations should be protected only within their Grade B contours or noise limited contours or whether TV stations should be protected regardless of the received TV signal strength. *Id.* The *NOI* further asks whether minimum performance standards for receivers would facilitate the sharing of TV broadcast spectrum with unlicensed devices. *Id.*

Finally, the Commission states that any unlicensed transmitter permitted to operate in TV broadcast spectrum should be required to identify unused TV broadcast spectrum before it can transmit. *NOI* at ¶ 16. The *NOI* asks whether specific transmission protocols exist, such as a "listen-before-talk" approach, that can enable efficient sharing. *Id.* The *NOI* seeks comment on how the Commission can enforce any rules it may adopt for unlicensed transmitters to ensure that they do not cause interference to authorized users of TV spectrum. *Id.*

## Discussion

## I. THE COMMISSION SHOULD REFRAIN FROM CONSIDERING NEW SHARED USES OF TV BROADCAST SPECTRUM UNTIL AFTER IT ADOPTS AND IMPLEMENTS PERFORMANCE STANDARDS FOR OVER-THE-AIR DTV RECEIVERS

### A. The Commission's Proposal to Authorize Unlicensed Transmitters to Operate in TV Broadcast Spectrum Raises Substantial Interference Concerns for Consumers Relying on Over-the-Air Television Reception

The Commission's Spectrum Policy Task Force ("SPTF") recently concluded that "receiver robustness generally has not been taken into account in Commission regulations" and that the Commission's "transmitter-centric policy is not necessarily efficient in today's spectrum environment."[2] In the above-captioned *NOI*, the Commission appears to have ignored the SPTF, seeking comment almost exclusively on how to define and regulate its proposed unlicensed transmitters while virtually ignoring, with the exception of one sentence,[3] the performance of the TV receivers that will be the victims of interference from the Commission's sharing proposal. As discussed below, absent performance standards for selectivity, sensitivity, dynamic range, and multipath tolerance of over-the-air TV receivers, allowing unlicensed transmitters to share

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2 *Spectrum Policy Task Report*, ET Docket No. 02-135 (November 2002) at 31 ("*SPTF Report*").

3 *NOI* at ¶ 15 ("Would minimum performance standards for receivers facilitate the sharing of TV spectrum with unlicensed devices?").

TV broadcast spectrum will cause interference to both current-generation analog and digital over-the-air TV receivers as well as next-generation over-the-air DTV receivers.

### 1. Current-Generation Receivers Have Not Been Designed to Share Spectrum with Unlicensed Transmitters

As Chairman Powell recently noted, there are approximately 81 million TV sets in the U.S. today that are not connected to cable or satellite and thus rely solely on free, over-the-air broadcasting.[4] Whether analog or digital, these millions of TV sets in the homes of consumers were not designed to operate in an interference environment with untold numbers of co-channel and adjacent channel unlicensed transmitters. If adopted, the Commission's sharing proposal may very well render these millions of TV sets useless as unlicensed transmitters proliferate, causing interference to sets not designed to operate in such an interference environment.[5]

Over-the-air television is too critical to sacrifice for the sake of promoting untested new devices. Over-the-air broadcasting provides vital services to the public, including crucial local

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[4] *See Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television, Second Report and Order and Second Memorandum Opinion and Order*, MM Docket No. 00-39 (August 9, 2002), Separate Statement of Chairman Powell ("*DTV Tuner Mandate Order*").

[5] Sinclair notes that the Commission's proposal to allow shared use of TV broadcast spectrum with unlicensed devices is puzzling considering that advocates of unlicensed operations have expressed the need for dedicated spectrum, not spectrum shared with a ubiquitous mass media service that will create a host of interference problems limiting the use of these unlicensed transmitters. *See, e.g.*, Comments of Microsoft Corporation, ET Docket No. 02-135 (January 27, 2003), at 7 ("the full potential of unlicensed wireless networks will not be realized through opportunistic use and underlay alone"); Comments of The Wi-Fi Alliance, ET Docket No. 02-135 (January 27, 2003), at 4 (urging the Commission to "designate additional bands for unlicensed spectrum"); *see also* Comments of Lockheed Martin Corporation, ET Docket No. 02-135 (January 27, 2003), at 10 ("[T]he Commission has focused too strongly on unlicensed uses of congested lower spectrum bands, such as 5 GHz. Instead, the Commission should refocus its efforts on providing exclusive access to a defined set of frequencies in higher unencumbered bands on an unlicensed basis."). Rather than authorizing new unlicensed uses of encumbered TV spectrum, Sinclair submits that the Commission's goal of facilitating use of unlicensed transmitters would be better served by finding dedicated spectrum for such uses.

programming and public safety services, such as emergency broadcasts. The ease of reception of over-the-air television is crucial in times of emergency even for those consumers who rely primarily on cable and satellite. Given the unreliability of many cable systems and the weather disruptions affecting satellite transmissions, consumers have come to rely on over-the-air reception as a guaranteed means of access to news and information.[6] In view of the vital public interest benefits of over-the-air television, the Commission cannot afford to allow new shared uses of TV broadcast spectrum by unlicensed transmitters, particularly since the design specifications of current-generation receivers do not account for such shared use. Thus, at the very least, the Commission should refrain from considering new unlicensed uses of TV broadcast spectrum until after consumers have replaced their current-generation receivers.

### 2. Unlicensed Transmitters May Be Able to Share TV Broadcast Spectrum in the Future if New Generations of Over-The-Air DTV Receivers Are Required to Meet Detailed Performance Standards

The Commission's proposal to authorize unlicensed use of TV broadcast spectrum could not come at a worse time. The Commission's proposal only serves to inject further uncertainty into an already stalled DTV transition.[7] Rather than focusing on new ways to share TV broadcast spectrum, the Commission should be focusing on ways to facilitate the DTV transition.

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[6] Sinclair has discussed the vital public interest benefits of quality over-the-air reception, even for sets designed primarily to operate with cable systems, in its Comments in the pending "Plug and Play" proceeding. *See* Comments of Sinclair Broadcast Group Inc., CS Docket No. 97-80, PP Docket No. 00-67 (March 28, 2003).

[7] In 1989, the Commission refused to permit unlicensed transmitters to operate in TV broadcast spectrum because of the potential impact on future DTV operations. *Revision of Part 15 of the Rules Regarding the Operation of Radio Frequency Devices Without an Individual License, First Report and Order*, 4 FCC Rcd 3493, ¶ 50 (April 18, 1989). The Commission concluded that "[P]rudence dictates a conservative approach. For this reason, at the present time, we are not allowing intentional radiators operated under the general limits to have their fundamental emissions located in the frequency bands allocated to television broadcast stations." *Id.* Fourteen year later, given the lack of progress made in the DTV transition, there appears to be no basis to deviate from this conservative approach.

For example, Sinclair has urged the Commission to facilitate the DTV transition by ensuring that new DTV receivers are capable of providing adequate reception of over-the-air DTV signals.[8] To date, the consumer electronics industry has proven either incapable or unwilling to produce receivers that can provide quality reception of over-the-air DTV signals with a simple antenna.

While the Commission has required broadcasters to meet very stringent and specific emission performance standards with respect to their DTV transmitter systems, the Commission has never required DTV receivers to meet the specifications for selectivity,[9] sensitivity,[10] and dynamic range[11] that underlie the Commission's DTV Table of Allotments. The Commission has assumed, but has never mandated, that DTV receivers meet these performance standards. In addition, the Commission's assumptions regarding receiver performance did not take into account the effects of multipath impairment and were instead based upon an additive white Gaussian noise-type environment which is not representative of a real-world interference environment. To address this problem, Sinclair has urged the Commission to adopt either mandatory or voluntary performance standards for DTV receiver selectivity, sensitivity, dynamic range, and multipath tolerance to ensure that receivers are capable of providing quality reception

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[8] *See* Sinclair Broadcast Group Inc., Petition for Partial Reconsideration, MM Docket No. 00-39 (November 8, 2002); Reply Comments of Sinclair Broadcast Group Inc., ET Docket No. 02-135 (February 28, 2003); Comments of Sinclair Broadcast Group Inc., CS Docket No. 97-80, PP Docket No. 00-67 (March 28, 2003).

[9] Given that the DTV Table of Allotments is characterized by never-before-authorized adjacent channel allocations, if DTV receivers reach the marketplace that cannot adequately separate two adjacent channels, viewers will not be able to receive their desired DTV station.

[10] In constructing the DTV Table of Allotments, the FCC used a computer program assuming a 10 dB noise figure for the VHF band and 7 dB noise figure for the UHF band. *See Advanced Television Systems, Sixth Report and Order*, 12 FCC Rcd 14588, ¶ 193 (April 21, 1997).

[11] The Commission's decision to assign adjacent channels in the same market assumes that the receiver can avoid being overloaded by a strong but unwanted near adjacent channel. If a receiver's dynamic range is inadequate, then viewers may not be able to receive many stations that operate in strong signal markets.

of over-the-air DTV signals. While mandatory performance standards are preferable for reception of over-the-air DTV given that those entities who control the production of receivers have demonstrated little interest in the over-the-air market,[12] voluntary performance standards may be acceptable if they are accompanied by a meaningful labeling regime with rigorous monitoring by the Commission.[13]

Far from facilitating the DTV transition, the Commission's proposal to allow unlicensed transmitters to share TV broadcast spectrum will cause the transition to take a step backwards. Given that over-the-air DTV receivers have proven incapable of providing adequate reception in the present interference environment, it is a certainty they will not be able to operate when unlimited numbers of unlicensed transmitters are operating in the same environment. Equally disturbing, the Consumer Electronics Association ("CEA"), the representative of electronics manufacturers that has stated that over-the-air television is not a worthwhile market,[14] is on

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[12] In its Report, the SPTF concluded that receiver performance standards are most appropriate "when the marketplace does not adequately promote receiver performance (*e.g.*, when the service provider does not control the manufacturing of the receivers)." *SPTF Report* at 31. The over-the-air television industry presents precisely this type of industry structure, in which service providers (*i.e.*, broadcasters) do not control the production of receivers.

[13] Reply Comments of Sinclair Broadcast Group Inc., ET Docket No. 02-135, at 8; Comments of Sinclair Broadcast Group Inc., CS Docket No. 97-80, PP Docket No. 00-67, at 5-7.

[14] With the emergence of cable and satellite, electronics manufacturers have expressed their view that over-the-air television is no longer a worthwhile market. *See* Daisy Whitney, *FCC Orders Digital Tuners in TVs by '07*, Electronic Media (Aug. 12, 2002) at 1A (quoting CEA spokesperson Jenny Miller as stating that "Most consumers don't need [a DTV tuner] because they get signals through cable"); Greg Gatlin, *Feds Mandate Digital TV Tuner*, The Boston Herald (Aug. 9, 2002) at 27 (quoting CEA President Gary Shapiro as stating "With fewer than 13 percent of American households relying on over-the-air reception of their TV signal, we don't need a digital broadcast tuner embedded in every new television in order to accelerate the DTV transition"); *FCC Orders Set Manufacturers to Include DTV Tuner*, Communications Daily (Aug. 9, 2002) (CEA President Gary Shapiro "said the decision was wrong because 90% of Americans didn't need tuners because they received their broadcast signals through cable or satellite"); Eric A. Taub, *The Big Picture on Digital TV: It's Still Fuzzy*, The New York Times (Sept. 12, 2002) at sec. G, p. 1 (quoting CEA President Gary Shapiro as stating that "When the digital television transition started, we thought it would be driven by broadcasters. What were

record applauding the Commission's decision to explore new unlicensed uses of TV broadcast spectrum.[15]

Considering the unwillingness of electronics manufacturers to do anything that would facilitate over-the-air reception of DTV to date, the Commission simply cannot afford to authorize a new shared use of TV broadcast spectrum without ensuring that over-the-air DTV receivers meet requirements for selectivity, sensitivity, dynamic range, and multipath tolerance to be able to reject the adjacent and co-channel signals emitted by these unlicensed devices, both individually and in the aggregate.[16] Thus, rather than giving further consideration to sharing of TV broadcast spectrum, Sinclair urges the Commission to take expedited action to adopt either mandatory performance standards or voluntary performance standards accompanied by a meaningful labeling regime for over-the-air DTV receivers.[17] In addition to facilitating the DTV transition by ensuring quality over-the-air reception for those millions of Americans who still rely on over-the-air television, such performance standards may facilitate the sharing proposal envisioned by the Commission in this proceeding. Until such performance standards are adopted

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we thinking? Cable and satellite is where the action is."). In addition, CEA has sued the Commission over its decision to require new over-the-air receivers to contain tuners for the reception of over-the-air DTV signals. *See Consumer Electronics Ass'n v. FCC*, Docket No. 02-1312 (D.C. Cir.) (filed Oct. 11, 2002).

15 *See* Comments of Consumer Electronics Association, ET Docket No. 02-135 (January 27, 2003), at 3.

16 *See* Joint Comments of The Association of Maximum Service Television Inc. and The National Association of Broadcasters ("MSTV/NAB"), ET Docket No. 02-135 (January 27, 2003), at 15 ("Before permitting the introduction of new unlicensed services in a particular band, the Commission must ensure that receivers for existing licensed services in the same or adjacent band can actually tolerate the maximum permissible interference temperature. This requires that the Commission adopt appropriate receiver performance standards and ensure that existing devices that do not meet these standards are no longer being used by consumers.").

17 The Commission has initiated a separate *Notice of Inquiry* addressing performance standards for over-the-air DTV receivers. *See Interference Immunity Performance Specifications for Radio Receivers, Notice of Inquiry*, ET Docket No. 03-65, MM Docket No. 00-39, FCC 03-54 (March 24, 2003).

and implemented, however, Sinclair urges the Commission to defer any further consideration of new shared uses of TV broadcast spectrum.

**Conclusion**

For the reasons discussed above, Sinclair urges the Commission to refrain from considering new unlicensed uses of TV broadcast spectrum until after consumers have replaced their current-generation receivers. In addition, Sinclair urges the Commission to refrain from considering future shared uses of TV broadcast spectrum until after it has adopted and implemented either mandatory performance standards or voluntary performance standards accompanied by a meaningful labeling regime for over-the-air DTV receivers.

Respectfully submitted,

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**CERTIFICATE OF SERVICE**

I, Sylvia A. Davis, a secretary with the law firm of Shaw Pittman LLP, hereby certify that on this 17th day of April 2003, served a true copy of the foregoing "COMMENTS" by hand delivery upon the following:

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